

Educational Product

Educators & Students

Grades 5-12

ET-2004-10-130-ARC

Educational Topic

Commercial Airline Pilot

Related Job Titles:

Pilot, Charter Airline Pilot, Co-Pilot

Job Description:

Commercial Airline Pilots fly while doing a wide variety of tasks such as crop dusting, law enforcement work, search and rescue missions, traffic monitoring and fire fighting, to name a few. A pilot's duties include much more than climbing aboard and flying the airplane. Pilots must check weather conditions and plan a safe route. The pilot then files the flight plan with air traffic control. It is important to note that most Commercial Airline Pilots are given a weather briefing and then handed a pre-prepared flight plan. They must thoroughly review the weather data and flight plan before pushback from the gate. During preflight the Commercial Airline Pilot must completely check the aircraft to ensure that all systems are operating properly and that all control surfaces and electrical equipment are functioning correctly. During the flight, pilots must monitor their progress and maintain communications with air traffic control facilities on the ground. After the flight, the pilot completes the necessary paperwork for the flight and closes out the flight plan.

Interests / Abilities:

- Do you enjoy using directional equipment to find your way around (compass, stars, maps, GPS)?
- Do you find planning more than one driving route on a roadmap interesting?
- Is it easy for you to follow directions or use a checklist?
- Are you decisive and calm under stressful conditions?
- Can you compute difficult math problems in your head?

Suggested School Subjects / Courses:

- Mathematics (algebra, geometry, trigonometry)
- Physics
- Aeronautics (science of flight)
- Communications or speech
- Geography and mapping

Education / Training Needed:

Most airlines require a 4-year college degree before consideration to their program and a private pilot's license or a commercial pilot's license. Additional pilot training in instrument flying (instrument rating) and many hours of flight time under various flight conditions and flying various types of aircraft (this includes passing written tests and hands-on examination with a flight instructor to receive the proper certification) are necessary.

Areas of expertise:

- Flight navigation and communication
- Aircraft operations
- · Aircraft structure and function
- FAA flight regulations
- Aviation and aeronautical principles

Additional Resources:

- Air Transport Association http://www.air-transport.org/
- Aircraft Owners and Pilots Association http://www.aopa.org/
- Airline Pilots Association International (ALPA) http://www.alpa.org/
- American Institute of Aeronautics and Astronautics http://www.aiaa.org/
- Careers in Aviation/Aerodynamics http://wings.avkids.com/Careers/index.html
- Earth to Orbit: Engineering Design Challenges http://eto.nasa.gov/
- Graduate Student Researchers Program http://spacelink.nasa.gov/Instructional.Materials/NASA.Educa tional.Products/Graduate.Student.Researchers.Program.Brochur e/.index.htmlt
- MATHCOUNTS Competition http://mathcounts.org/
- Minority University Research and Education Programs http://mured.nasaprs.com/
- NASA Cooperative Education Program for college students

http://spacelink.nasa.gov/Educational.Services/ NASA.Education.Programs/Student.Support/NASA.Cooperative .Education.Program/.index.html

- NASA Jobs http://nasajobs.nasa.gov/
- NASA SHARP Internship Program for highschoolers http://www.mtsibase.com/sharp/
- NASA Student Employment http://nasajobs.nasa.gov/stud_opps/employment/index.htm

What can I do right now?

- Consider participating in the Junior ROTC and/or the Civil Air Patrol (CAP)
- Take a ground school course.
- Start working on your private pilot's license. (Yes, even if you are still in high school you can earn your private pilot's license!)
- Take a shop course and learn how piston engines work.
- Volunteer to work at your local airport to see if you find the environment interesting.
- Get your ham radio license.
- · Learn to fly radio controlled airplanes.
- · Learn how to read the various kinds of aeronautical charts.
- Learn how to navigate using the constellations.
- Spend a lot of time reading maps to become geographically literate.
- Get experience flying as a passenger in many different kinds of aircraft.
- NASA Student Involvement Program student contests
 http://www.nsip.net/index.cfm
- Revolutionary Vehicle Concepts and Systems student competition

http://avst.larc.nasa.gov/competitions.html

 Tech-Interns.com http://www.tech-interns.com/

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- http://ehb2.gsfc.nasa.gov/edcats/educational_topic
- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



http://quest.nasa.gov/people/index.html

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